

In the Abstract

The present invention provides a seamless expandable oil country tubular goods article, which has a superior pipe expansion property in a expanding process at an expand ratio of more than about 30% although having a high strength such as a tensile strength (TS) of about 600 MPa or more, and a manufacturing method thereof, the seamless expandable oil country tubular goods being in an as-rolled state or being processed, whenever optionally necessary, by inexpensive nonthermal-refining type heat treatment. ~~In a particular product, 0.010% to less than 0.10% of C, 0.05% to 1% of Si, 0.5% to 4% of Mn, 0.03% or less of P, 0.015% or less of S, 0.01% to 0.06% of Al, 0.007% or less of N, and 0.005% or less of O are contained, and at least one of Nb, Mo, and Cr is contained in the range of 0.01% to 0.2% of Nb, 0.05% to 0.5% of Mo, and 0.05% to 1.5% of Cr, so that $Mn+0.9\times Cr+2.6\times Mo\geq 2.0$ and $4\times C-0.3\times Si+Mn+1.3\times Cr+1.5\times Mo\leq 4.5$ are satisfied. The microstructure of a steel pipe preferably contains ferrite at a volume fraction of 5% to 70%, and the balance is substantially composed of a low temperature transforming phase. The manufacturing condition includes at least one of a: a rolling finish temperature of 800°C or more in pipe forming, b: normalizing treatment after pipe forming, and c: holding of a steel pipe in a dual phase region for five minutes or more after pipe forming, followed by air cooling.~~